NWCG Equipment Technology Committee

National Fire Equipment System

Safety Warning: 21-01

April 22, 2021

To: Wildland Fire Community

From: Dave Haston, Chair, NWCG Equipment Technology Committee

Subject: Drip Torch Lock Rings Detaching

Issue: Lock rings may unexpectedly detach from the drip torch.

Background: A lock ring detached from a full drip torch that a firefighter carried horizontally on a pack. Fuel spilled out of the drip torch and ignited, and the firefighter sustained burn injuries. Following this incident, other firefighters have reported lock rings loosening during burn operations. (See Clear Creek Rx Drip Torch Injury RLS, 2021, https://www.wildfirelessons.net/viewdocument/clear-creek-rx-drip-torch-leg-burn.)

The National Technology and Development Program (NTDP) inspected two drip torches with reported lock ring problems; one was the drip torch involved in the recent Clear Creek incident. Both lock rings appeared to close tightly but would only engage about one full turn (less than 360°). Occasionally, with additional pressure, the lock ring would spin freely and would come off completely (see Drip Torch Collar Popping Off, https://www.youtube.com/watch?v=9PErxsnPWKA). NTDP found that some mismatched lock rings had slightly larger thread diameters, either because the lock ring and the drip torch tank were from different manufacturers or because of wear. These mismatched or worn lock rings appear to secure tightly but can easily jar loose.

Action: To lessen the likelihood of having a lock ring detach, when tightening, ensure that the lock ring engages threads for at least 1-1/2 full turns (540° minimum). Any less may indicate inadequate thread engagement and could lead to a possible detachment of the lock ring. If the lock ring becomes tight with less than one full turn (360°), assume that the components are mismatched; **DO NOT USE**.

Additional Information:

1. Do not interchange parts between drip torches made by different manufacturers. Small differences in spout length, gasket sealing depth, cover thickness, and lock ring seating can affect the seal quality of the components. Be cautious of components in spare part caches.
2. Only carry drip torches by hand to avoid fuel leakage and contamination of clothing and fireline packs. Keep any drip torch that is not actively igniting vegetation in an upright position.
3. Replace components with known compatible replacement parts from the original equipment manufacturer. Manufacturers provide part number information with new drip torches and on their websites.
4. Consider engraving or etching marks that identify torch components—torches, lock rings, and tank cover—that are known to fit together correctly to aid in keeping manufacturer-specific components together.
5. For information and tips related to burning fuel on flame resistant clothing, review the video, Drip Torch Fuel on Pants, https://www.youtube.com/watch?v=2DwMMQpSSJQ.
6. Also, see Chapter 3 of the *NWCG Standards for Ground Ignition Equipment*, PMS 443, https://www.nwcg.gov/publications/443, and the *NWCG Standards for Transporting Fuel*, PMS 442, https://www.nwcg.gov/publications/442, for drip torch guidance.

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